

NOTE

Daylight Surface Occurrence of Myctophid Fishes Off the Coast of Central America

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THE CAPTURE off the coast of Central America of *Benthosema pterota* (Alcock, 1891), by California-based tuna clippers, on three known occasions, at the surface during daylight hours is worthy of note. Myctophids are ordinarily believed to be bathypelagic in nature and associated with the twilight zone of the sea. The fact that myctophids make nocturnal migrations to the surface has long been known and many specimens have been taken at the surface during the hours of darkness.

The first daylight capture of *Benthosema pterota* was recorded 13 mi. west of Cape Blanco, Costa Rica, on March 14, 1952, by the tuna clipper "Anna M." The fish were taken with a dip net at 1300 on a clear day from the fishing racks of the vessel. The water was clear and the surface temperature was 82.5°F. The skipper, Ted Sorensen, reported three "balls" of reddish-brown bait at the surface with yellowfin tuna (*Neothunnus macropterus*) feeding voraciously on them. The fish, as described by Sorensen, were in tight elliptical aggregations measuring about 10 ft. in length and 3 ft. in depth. The tuna feeding upon the myctophids refused the fish (*Cetengraulis mysticetus*) used by this vessel for live bait when it was offered to them.

A second capture of the species at the surface during daylight hours was reported by a crew member of the tuna clipper "Sun Traveler"; the capture was made on March 15-20, 1954, 65 mi. southwest of Caño Island, Costa Rica. Mr. Joseph Silva observed the fish at 10:00. They also appeared as a reddish-brown "ball" being fed on by skipjack (*Katsuwonus pelamis*), yel-

lowfin tuna, and sea birds. Four other small schools were seen in the same locality. The clipper left the immediate area at this time and returned at 16:00 the same day. At this time, the schools of myctophids were still on the surface and when the vessel drew close they took shelter under the stern, evidently for protection from the yellowfin and skipjack. Specimens were easily captured with a dip net from the racks on the stern of the vessel.

A third occurrence of this species on the surface during daylight hours was noted on April 7, 1955, at 13° 19' N. and 91° 16' W. by the crew of the tuna clipper "Commadore." The fish were again captured with a dip net from the stern of the vessel while it was fishing for yellowfin. The fish again appeared as reddish-brown "balls" on the surface.

The table below gives the size range and mean standard length for the three samples of *Benthosema*.

Although only three samples have been obtained by the author, apparently the sighting by fishermen of myctophid schools on the surface during daylight hours in the spring of the year is not uncommon. Mr. Edward Silva, managing owner of the "Santa Rosa," says that fish fitting the description of myctophids have been taken by clippers and attempts made to use them as tuna bait. However, the fish scaled easily, were weak, and were unsatisfactory for bait. Mr. Manuel Luz, former skipper of the "Saratoga," said he has seen many small "balls" of bait in the waters off Costa Rica during the spring of the year that fitted the same description. He also noted that the fish made poor bait because they scaled easily and were too weak for retention in the bait wells.

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NO.	DATE OF CAPTURE	NO. MEASURED	MEAN STANDARD LENGTH (mm.)	RANGE IN STANDARD LENGTH (mm.)
1	March 14, 1952	49	39.0	35-47
2	March 15-20, 1954	43	46.3	38-54
3	April 7, 1955	50	35.2	32-40